Citation Metrics of Library and Information Science Professionals of the World: An analysis based on AD Scientific Index

Synopsis Submitted to

Swami Ramanand Teerth Marathwada University, Nanded

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In

Faculty of Interdisciplinary Studies

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Contents

1.0 Preamble

1.1 Statement of the research Problem

1.2 Reason for choosing topic

1.3 Uniqueness of the study

1.4 Explanation of Key Concepts

2.0 Objectives of the study

3.0 Hypothesis

4.0 Scope and Limitations

5.0 Literature review

6.0 Significance of the study

7.0 Population and collection of sample

8.0 Research Methodology

8.1 Research Method

8.2 Research Techniques

8.3 Tools of data collection, Design of database, Pilot study,

9.0 Data analysis and presentation

10.0 Report writing, Style Manual used

11.0 Conspectus

Appendices

A References and Bibliography

B Plan of work and targets to be achieved

1.0 Preamble:

The Citation Metrics, Bibliometrics, Scientometrics are now referred as evidence of academic excellence by research journals, governments, institutions, corporations, and funding agencies look to them as confirmation of best academic performance. An academic data is cited in further parts of academic work such as research papers, thesis, dissertations, has now become the standard for computing the final outcome and impression of a bit of research.

1.1 Statement of the research Problem

Ranking scientists according to the impact factor is a practice that started many years ago. The need to access scientifically valuable studies within limited time frames or the need to find scientists working in a certain field has led to the procedure of ranking scientists and scientific studies. For this purpose, many scoring systems such as the h-index, i10 index, g-index, m-index, i10 index have been studied as numerical indicators showing productivity and effectiveness of a researcher. Though each of these indices has advantages as well as disadvantages, theses indices are used throughout the world.

Present study is to find out quantitative academic excellence of Library and Information Science professionals of the world. Hence the statement of the problem is, "**Citation Metrics of Library and Information Science Professionals of the World: An analysis based on AD Scientific Index"**

1.2 Reason for choosing topic

The news flashed in media about the ranking of different teachers in AD Scientific index after publication of AD Scientific index. It was very proud moment to see the names of familiar professionals/teachers/Scientists in the list. The researcher was curious to know in depth about the index and ranking of the Library and Information Science professionals in the listing. The study can highlight the professionals, universities, Countries, specializations which are scholastically strong.

1.3 Uniqueness of the study

Researcher has meticulously searched different databases in which full text databases such as Shodhganga and Shodhgangotri, bibliographical databases such as INFLIBNET thesis catalogue, Dayanidhi, references books such as Bibliography of doctoral dissertations, thesis of the month from the AIU University news to avoid the duplication research work. Referred leading indexing and abstracting databases such as LISA online, LISTA, Emerald, JCCC, EBSCO, LIS e-prints, Google scholar, Web of science, Scopus, ProQuest, and NDLI. There were few studies on related topic which are enumerated in literature search. However, there is no any research study on the present topic hence researcher has selected the topic.

1.2 Explanation of Key Concepts

A) Citation

A "citation" is the one of method to tell your readers that certain material in your work came from another source. It also gives your readers the information necessary to find the location details of that source on the reference. Basically, it provides an important roadmap to your research process. Whenever someone uses sources such as books, journals or websites in your research, you must give credit to the original author by citing the source.

A citation may be defined as a reference to a text identifying the document in which it may be found. The citations have more importance that what is generally assumed. An important use of citation lies in bibliographical work. The bibliography on a resent topic can easily be compiled by noting down the citation (or reference as is generally called) given at the end of relevant article and then arranging them in manner (Bose, 1986).

B) Metrics

The term 'Metrics' came from Latin word metrics and French word metrics in 1864, which refer to quantitative measurement or approximation. Citation metrics is a system which tracks and measures the impact of any publication in scholarly communication process (Kawatra, 2000).

Metrics are measures of quantitative assessment commonly used for comparing, and tracking performance or production. Metrics can be used in a variety of scenarios. Metrics are heavily relied on in the financial analysis of companies by both internal managers and external stakeholders.

Metrics are used because of a desire for an objective means of comparing scholarship for purposes of promotion and tenure and to attract or grant funding. However, they all have weaknesses and most of the criticism revolves around the limits of coverage of the databases used to create the metrics, failure to account for differences in scholarly output and citation rates among disciplines, and the over-reliance by administrators and funders on a single metric or on quantitative rather than qualitative metrics in judging scholarship (Raju, 2006).

C) Citation Metrics

Citation metrics is nothing but counting of publications and citations i.e., measuring the output and the impact of scientific research.it means examining and ranking people and institutions, countries and research outputs.

According to Lancaster (2022), Citation metrics or Bibliometrics is "the discipline of measuring the performance of a researcher, a collection of articles, a journal, a research discipline or an institution". This process involves the 'application of statistical analyses to study patterns of authorship, publication, and literature use'.

D) Library

Culpepper J. (2022) defined the term library as, "A collection or group of collections of books and/or other print or non-print materials organized and maintained for use (reading, consultation, study, research, etc.). Institutional libraries, organized to facilitate access by a specific clientele, are staffed by librarians and other personnel trained to provide services to meet user needs. By extension, the room, building, or facility that houses such a collection, usually but not necessarily built for that purpose.

E) Information:

Information is data that has been processed in such a way as to be meaningful to the person who receives it. It is anything that is communicated. The information is acquired by

gathering items of data into a meaningful form. For example, marks taken by students and their roll numbers form data, the report card/sheet is the information. Information containing wisdom is known as knowledge.

Information is that data which has been converted into a more intelligible form. It is nothing but the set of data that has been arranged for direct utilization of mankind, as information helps in their decision-making process (E-computer notes, 2022).

F) Science:

It is any system of knowledge which is concerned with the physical world and its phenomena and that entails unbiased observations and systematic experimentation. In general, a science involves a pursuit of knowledge covering general truths or the operations of fundamental laws. Science is curiosity in thoughtful action about the world and how it behaves (Encyclopedia Britannica, 2022).

G) Professionals:

A profession is defined as an activity or set of activities constituting a calling. A calling is defined as an activity for which the performer has a legal and moral right to be paid reasonably Whether he works in an organization or is self -employed (e-gyankosh, 2022)

The term professional refers to any person who earns their living from performing an action that requires a certain level of education, skill, or training. There is typically a required standard of competency, knowledge, or education that must be demonstrated (often in the form of an exam or credential), as well as adhering to codes of conduct and ethical standards. (Britannica Dictionary, 2022)

H) Library and Information science Professionals:

Librarianship is a distinct and distinguished profession in modern society. It is engaged in public service and plays an important role in national development. Librarianship today is termed as “Library and Information Profession” since the concept of librarianship has changed in view of the changing information needs of the society.

Librarianship is a noble profession. A librarian derives his joy by seeing the dawn of joy in the face of the readers who were helped in their search for the right information at the right time. LIS professionals are generally involved in the process of acquisition, processing,

organizing and maintaining documents in a library and providing various types of information services based on these documents and their experience (E-gyankosh, 2022)

Library and information science is an interdisciplinary field of study that centers on the documentation that records our stories, memory, history and knowledge. LIS professionals serve as custodians of printed materials records, photographs, and audiovisual materials (Wikipedia, 2022).

I) World

The noun world usually refers to the earth, including both the planet itself and the organisms that live on it (Vocabulary, 2022). The word world refers to all the people who live on this planet, and our societies, institutions, and ways of life.

J) AD

It is name given to indexing database, which has been developed by Prof. Dr. Murat ALPER and Associate Prof. Dr. Cihan DOGER (MD) by using the total and last 5 years' values of the i10 index, h-index, and citation scores in Google Scholar.

K) Scientific

The word Scientific is used to describe things that relate to science or to a particular science. Based on, using, or in accordance with, the principles and methods of science; of or pertaining to science or the sciences, scientific studies, occupied or concerned with science, regulated by or conforming to the principles of exact science scientific procedures or systematic or accurate in the manner of an exact science (Collins dictionary, 2022).

L) Index

The American National Standards Institute (2022) **d**efines index as, "a systematic guide to items contained in or concepts derived from a collection (document, group of documents, or set of objects). It is arranged in a known or stated order, usually different from that of the items or concepts within the collection itself" (Cambridge English Dictionary, 2022).

M) AD Scientific Index:

The AD Scientific Index is a system that provide evaluations of journals and universities, is a ranking and analysis system based on the scientific performance and the added value of the scientific productivity of individual scientists. Furthermore, it provides rankings of institutions based on the scientific characteristics of affiliated scientists.

Besides the indexing and ranking functions, AD Scientific Index sheds life on academic lives and offers the user the opportunity to perform an efficient academic analysis to scrutinize and detect faulty and unethical profiles, plagiarism, forgery, distortion, duplications, fabrication, slicing, salamization, unfair authorship, and several manifestations of academic mobbing.

The AD Scientific Index (2022) shows the ranking of an individual scientist by 12 subject (Agriculture & Forestry, Arts, Design and Architecture, Business & Management, Economics & Econometrics, Education, Engineering & Technology, History, Philosophy, Theology, Law / Law and Legal Studies, Medical and Health Sciences, Natural Sciences, Social Sciences and Others), 256 branch, 11,910 institution of employment, 195 country, 11 region (Africa, Asia, Europe, North America, Latin America, Oceania, Arab League, EECA, BRICS, USAN and COMESA) and in the world.

2.0 Objectives of the study

The objectives of the present study are -

1) To examine metrics of Library and Information Professionals in AD Scientific index;
2) To review status of Library and Information Professionals in overall subjects specified in AD Scientific index;
3) To classify Library and Information Professionals as per gender, designations and specialization under study;
4) To compare participation of Library and Information Professionals in AD Scientific index as per geographical (Continent, Country, States in India) areas.
5) To prepare rank list of Library and Information Professionals depicted in AD Scientific index on parameters viz. citations, h-index, i10 index (total and five years)

3.0 Hypothesis

Following are the hypothesis of the study-

1) Library and Information Professionals appear significantly in AD Scientific index;
2) Male Library and Information Professionals dominate female Professionals in citation metrics;
3) Indian Library and Information Professionals lead in citation metrics;
4) Library and Information Professionals working in universities dominates professionals working in other institutions.

4.0 Scope and Limitations

The scope of the study is to ascertain citation metrics of Library and Information Professionals from all over the world. The data will be collected and analyzed on parameters specifically citations; h-index and i10 index (total and five years) appeared in AD Scientific index 2023.

5.0 Literature Review

1) Daughtry (2022) in his article titled "Web of Science Citation Median Metrics overcome the major constrains of the journal impact factor discussed citation median. Citation median overcome several concerns that have been raised about the JIF and seem to provide enhanced objectivity as an indicator of journal impact in publishing original research and reviews. Therefore, author advocate that these additional WoS metrics might be preferentially considered as indicators of journal performance.

2) Gasparyan and others (2021) in their paper entitled "Article Level Metrics" specified that **a**rticle-level metrics are increasingly recognized as reflections of real-life influence of scholarly research output. While digitization and aggregation of online information is becoming ubiquitous, any activity surrounding published articles can add value to these metrics. Article metrics aggregate information on individual item usage, expert evaluation, public attention, and citations.

3) The paper written by Aroeira and Castanho (2020) described that the total number of citations are poor indicator of the effective impact of a research paper to advance the state of the art. Alternatively, citing papers that embed technologies, products, methodologies, concepts, or hypothesis of the original paper are a reliable option to assess impact.

4) The paper Altmetrics and citation metrics as complementary indicators for research Management written by Burhan and Ahmet (2021) article explains about how citation metrics have made an appearance to advance scientific communications, networking, and research planning. With unequal popularity of various social media platforms, altimetric analyses have become more objective reflections of the societal impact of scholarly outputs.

5) Choubey (2020) in his doctoral dissertation, Citation metrics of Indian open access journals in the field of Physics, Chemistry and Mathematics: a cross disciplinary study attempted to know the cited-citing pattern of open access journal of Physics, Chemistry and Mathematics.in this thesis researcher study to find out Pattern of cited-citing references at individual journal level,

Pattern of cited references according to age at individual journal level, citing life of citing references at individual journal level etc. and many more aspects.

6) Wiggers and Verberne (2020) explained about the analysis of usage and citation data in a legal search engine, for the future purpose of transforming raw counts into a ranking variable that think about the impact relevance of documents for the users.

7) The article by Ioannidis, Klavans and Boyack (2019) shows the Percentiles of total citations and composite citation metric for each scientific fields, career-long data. As well as provides standardized information on citations, h-index, coauthor ship-adjusted hm-index, citations to papers in different authorship positions, and a composite indicator.

8) Ioannidis, Boyack and Wouters (2016) in their article titled "Citation Metrics: A Primer on How (Not) to normalize discussed about the new perspective of using the citation metrics. It explains about Some better options for summarizing and interpreting citation metrics from single papers across multiple papers.

9) The article Scientific Literature and Evaluation Metrics: Impact Factor, Usage Metrics, and Altmetrics by … (2021) explained that how each of the past six years, Journal of the society of Laparoscopic and Robotic Surgeons has entirely open access without any restrictions of scientific material - has experienced a similar explosion involving information distribution. In scientific publishing industry, research metrics are tools to measure performance at the journal level and at the author level. open access publications, along with readily available online communication and technology, have revolutionized the accessibility, distribution, and gathering of scientific information.

10) Dhamhere (2018) in her paper entitled 'Cumulative Citations Index, h-index and i10-index (research metrics) of an educational institute: A Case Study' explained about the importance of google scholar profile as well as its advantages and disadvantages. Active participation of Indian universities and institution is essential in research to increase the research metrics.

6.0 Significance of the study

Citation metrics portrays the quantitative status of research output of an individual or journal or an institute. Citation metrics of scientists of the world has been shown in the AD Scientific index. Present study finds outs the actual status of Library and Information Science professionals. This study is significant because,

The study will portray exact position of Library and Information Science professionals;

It will find out contribution of Library and Information Science professionals in comparison with other subject areas;

It will help to know the strengths and weakness of the Library and Information Science professionals;

It will help to understand gap in areas of research;

The study may come out with a product showing key LIS professionals in the world.

No such study has been conducted before on this topic;

7.0 Population and collection of sample

Presently there are total 10, 82, 692 scientists from 216 country and 19,503 universities in AD Scientific index 2023. Out of which 1814 are the Library and Information Science Professionals which can be said as a population of the present study. The researcher will collect data of entire population hence there will 100% sample in present study.

8.0 Research Methodology

Research methodology covers research method, research techniques and tools of data collection.

8.1 Research Method

The most appropriate method for this study would be descriptive research method and bibliometric study. Descriptive research is a type of research that is used to describe the characteristics of a population. It collects data that are used to answer a wide range of what, when, and how questions pertaining to a particular population or group. (Research connections, 2022)

According to the NOAA Central Library (2022), "Bibliometrics is the quantitative analysis of academic publications. Using academic publications as a data source, bibliometric analysis attempts to provide a better understanding of how research is produced, organized, and interrelated.

8.2 Research Techniques

Evaluative survey technique is adopted when the problem lies in the present. According to Wikieducator (2022), Evaluative surveys are usually conducted to evaluate any program or any implementation of scheme which is already done by the organization or government.

8.3 Tools of data collection, Design of database, Pilot study,

The data essential for study will be gathered from the online database of the AD Scientific index. Hence the tool adopted for data collection is the online database of AD Scientific index. It is a

kind of secondary data collection. Secondary data collection is different from primary data collection. There are no specific collection methods. Instead, since the information has already been collected, the researcher consults various data sources, such as: Financial Statements, Sales Reports, Retailer/Distributor/Deal Feedback, Customer Personal Information (e.g., name, address, age, and contact info), Business Journals, Government Records (e.g., census, tax records, and Social Security info), Trade/Business Magazines and the internet (Simplilearn, 2022).

9.0 Data analysis and presentation: Data analysis, Presentation

Collected data will be analyzed using MS Excel. Analyzed data will be presented through text, tables and graphical form.

10.0 Report writing, Style Manual used

Report of the research under study will be written systemically. The APA style manual will be adopted for report writing, in text citations and references.

11.0 Conspectus:

The thesis of the research study will divided into five chapters,

Chapter 1: Introduction

Chapter 2: Review of Related Literature

Chapter 3: Library and information Profession and AD Scientific Index,

Chapter 4: Data Collection Analysis and Interpretation

Chapter 5: Conclusion, Suggestions and areas for further study

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Plan of work and targets to be achieved

Sr. No.	Tentative time period	Plan for work and targets to be achieved
1	21/02/2022 to 30/06/2022	Joining report, RAC, Course work Completion, Literature search for selection of topic, Synopsis preparation
2	01/07/2022 to 31/12/2022	Presenting the topic in RRC, Completing administrative procedure like Registration, eligibility etc. First Progress report submission, Study of Style manual, Review of related literature, Publication of research paper based on concept of the study (Conceptual paper)
3	01/01/2023 to 30/06/2023	Second Progress report presentation and submission, Writing of review of related literature chapter, Writing of thematic chapter, Course work Internal paper -4, Publication of research paper based on review/ style manual (Review paper, style manual)
4	01/07/2023 to 31/12/2023	Third Progress report submission, Data collection, Analysis, Tabulation and presentation, Application of Statistical tests, Writing of data collection, analysis and presentation chapter, Course work Internal paper 5, Publication of research paper based on theme, population of the study (Theme paper)
5	01/01/2023 to 30/06/2024	Fourth progress report presentation and submission, Writing of Conclusion and suggestions Chapter, Writing of Introduction Chapter, Compilation of Bibliography Publication/ Presentation of research paper based on part of the analysis of the study (Study based research paper).
6	01/07/2023 to 31/12/2023	Fifth Progress report submission, Final Synopsis preparation and submission, Pre Ph. D. presentation, First draft of thesis, Second draft of thesis and third and Final draft of thesis,
7	01/01/2024 to 21/02/2022	Sixth progress report presentation and submission, Plagiarism checking, Printing, binding, No dues etc.
8	21/02/2024 onwards	CD Submission, Thesis submission, Viva-voice and award of degree, notification, publication of thesis in book form.

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